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ABSTRACT

This state of the art review discusses approaches to the measurement of theological concepts, and briefly describes the purpose and limitations of selected tests in the following areas: religious knowledge (mainly biblical knowledge); theological belief; religiosity--observable religious activity; religious experience--mystical experience; and character or morality. Ordinal measurement techniques are recommended for constructing one's own tests of religious attitudes and knowledge, as an alternative to objective and essay tests. Each item can be scored on an ordinal scale in one of two response styles: Likert (agree, disagree, undecided) and semantic differential (bipolar adjectives, such as strong/weak, active/passive). Two tests are appended: the Concept Evaluation Test, and What Do You Believe? (CP)

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APPROACHES TO MEASUREMENT IN RELIGIOUS EDUCATION

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Paper presented at the International Convention of the Religious Education Association, November 20-22, 1977, Saint Louis, Missouri

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> . . . our theology has . . .
> nothing against mathematization, quantifying and formalizing of problems, as long as no one is so lacking in a sense of humor as to assume that these methods serve to provide an exhaustive explanation of such phenomena as love and grace.
>
> --Hans Küng, On Being a Christian, Doubleday, 1976, p. 85.

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BACKGROUND

The Neglect of Tests: A Brief Historical Note

It is axiomatic that "faith" is not subject to "measurement." This is one of the most easily understood reasons that "tests" and statistical techniques are viewed with suspicion among church people and others with a concern for theology. Other reasons for the suspicion are as academic as an historical understanding of the antagonisms between positivism and theology, or as personal as a fear of mathematics rooted in a humiliating fourth-grade failure to learn the multiplication table.

In spite of the suspicion, the social and behavioral sciences have developed quantitative tools and methodologies which have obvious potential utility in religious education practice and research. It is the purpose of this paper to review selected tests and approaches to testing.

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The last comprehensive (or semi-comprehensive) survey of the topic was Watson's Experimentation and Measurement in Religious Education, published in 1927. This book included a textbook-type review of statistical research methodology and brief descriptions of available tests and other measurements in religious education and "character education."

About the same time, a number of quantitative studies were published, including the University of Iowa Studies in Character monograph series (including Howells, 1928, and Sinclair, 1928), the multi-volume Indiana Religious Education Studies (Athearn, et.al., 1923-24), certain of the Payne Fund Studies on Motion Pictures and Youth (cf. Charters, 1933) and Hartshorne and May's (1928-30) Character Education Inquiry (Columbia University).

A review of the journal, Religious Education, shows an interest in quantitative studies during the late 1920's and early 1930's, although few such studies were published in that journal. Most of the Religious Education articles about quantification were written by Hugh Hartshorne (cf. 1915, 1919, and 1922), and it may be that these early articles were products of a small group that never really exerted broad influence. Betts (1928) surveyed the possibilities for empirical quantitative research in religious education, and wrote an article that is still worth reading.

At the same time, concern was being expressed about the implications of the fact that statistical methodology tends to be used by researchers who support a behaviorist or neo-positivist philosophy (Horan, 1927). This philosophical problem remains with us today. Popular textbooks such as Complex Human Behavior (Staats and Staats, 1963), which assume that human nature can be described adequately from a behaviorist perspective present a significant challence to religious educators and theologians. Too frequently the challenge has been "answered" with a hasty response which rejects all attempts at educational and psychological measurement. It is the position of the present author that measurement need not be undergirded by a behaviorist philosophy

The philosophical arguments are beyond the scope of this paper, but the paper's review of actual measurement techniques should lend support to such a philosophical argument.

In the half century since the mini-flurry of essays and research studies of the 1920's, empirical religious educational research has been almost unheard of,* and such research as has been reported has, in general, employed only the most elementary techniques of statistical analysis. Meanwhile, there have been major advances in behavioral and social research methodology, statistical theory, and data processing. High speed computer data processing, now available on any major university campus, makes commonplace once exotic statistical techniques such as factor analysis. Courses in statistical research methodology are being taught in departments of education, business, psychology, speech, and even history.

Perhaps it is time to take a new look at the "state of the art" and once again consider the possibilities for quantitative research methodology in religious education.

Types of Measurement

What constructs are subject to quantification, and what constructs are strictly qualitative? A review of the vast literature reporting social and behavioral science studies will lead one to question whether there is any construct which is not potentially subject to study by quantitative methodologies. The traditional quantitative-qualitative distinction breaks down in light of a basic statistical distinction among four classes of measurement:

> "Nominal measurement" simply assigns numbers to classes for the sake of distinguishing one class from another. For example, on a survey form, males may be coded as "1," and females as "2."
>
> "Ordinal measurement" ranks the subjects under study according to the "amount" of a construct displayed by the subject. However, ordinal measurement does not permit one to judge

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* The Journal for the Scientific Study of Religion should not be overlooked, but for the most part it has published sociological studies of little interest to religious educators.

how much more of the construct is displayed by subject A than by subject B. For example, in the large controversy over I.Q. measurement, it has been argued (rightly or wrongly) that I.Q. is an ordinal measure, so that if A scores 102, B scores 110, and C scores 112, one can rank A, B, and C, but cannot make an inference based on the relative magnitude of the scores.

"Interval measurement" employs some unit of measurement so that one can meaningfully compare the magnitude of scores, as well as rank them. Interval data can be meaningfully added and subtracted, while it is meaningless to add and subtract nominal and ordinal data.

"Ratio measurement" is seldom encountered in social and behavioral science, a fact which by itself has theological implications. Ratio data include an absolute zero, so that "zero" indicates a total absence of the construct being measured.

These four classes of measurement are not "well defined" in the mathematical sense. That is, given some data, one cannot always clearly determine to which category the data belong. The line is most fuzzy between ordinal and interval measurement. However, the four classes are distinct enough to be useful, and a person concerned with theological analysis should be aware that there is little question as to whether quantification can be attempted. The question is at what level quantification is appropriate.

For example, consider the problem of teaching effectiveness in religious education. A number of "objective" tests have been constructed to see how well students have grasped various theological concepts.* Typically, each item on the test will be scored as right or wrong, and the student will be given a total score based on the number of right answers, or based on the number of right answers minus a percentage of the wrong answers. Everyone who has been to school is familiar with such a testing scheme. The test scores are almost always treated as interval measures.

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* An extensive set of such tests was developed as the fruit of several Masters theses done at the Catholic University of America in the mid-1950's. e.g., Buttres, 1954. The tests are based on pre-Vatican II Catholic doctrine, and have little practical use today.

If the teacher is trying to impart information, such a testing scheme is a valuable indicator of the teacher's effectiveness, and the scores, as interval measures, allow the teacher to compare his/her relative effectiveness with various students. Furthermore, some religious educators consider that theological concepts should be taught by rote (as in classical catechisms). If the teacher takes a rote approach to theology, then true-false and multiple choice tests are appropriate.

However, many religious educators attempt to help the student attain a set of theological concepts which will develop as the student matures. They say that no sixth-grader will have the same concept of God that a theologically mature elderly person will have, but that this does not mean that the sixth grader's concept is wrong.

How can we test for developing conceptualization? The most common answer is to deny the utility of quantification, and (if we do any formal evaluation at all) turn to "essay-type" tests. But essay tests, as they are usually scored, are notoriously unreliable measures of learning.

Perhaps a better method of testing for developing conceptualization is to prepare a test based on ordinal measurement. Privette (1972) made a notable approach to this sort of testing. For a given concept, he provided six alternative definitions. The student was directed to select the best definition. Each item was scored on an ordinal scale from "0" to "5," depending on the adequacy of the selected definition. (The test is reproduced as appendix A to this paper.)

It is obviously difficult to construct an adequate test of this type, and the reader may or may not accept the adequacy of Privette's test. The point being made here is that the present author contends that this test properly provides ordinal scores, not interval scores. For a particular item, the answer scored "5" is not one unit better than the answer scored "4" and two units better than the answer scored "3." We can rank-order the answers, but we cannot say how much better one is than the other.

Such an approach allows the measurement of conceptual growth, but we must be careful when we analyze the data. For an "average" score

we may compute a mode or median, but, strictly speaking, mean and standard deviation are meaningless. Similarly, we can compute a rank-order correlation, but the familiar Pearson r is not appropriate.

TESTS OF KNOWLEDGE

Tests of knowledge are relatively simple. If one is concerned with an objective body of material, such as the contents of the scripture, one can construct a test following procedures developed by specialists in testing.

We have already made reference to the tests of doctrinal knowledge developed at Catholic University a quarter of a century ago (e.g., Buttres, 1954). In 1976, the National Catholic Educational Association published the "Religious Education Outcomes Inventory," a carefully prepared test covering both knowledge of doctrine and scripture, and the student's "religious attitudes." At this time, reliability data, item analysis data, and similar technical information have not been published for the test, but it seems to have good "face validity."*

Most of the serious test development related to religious knowledge has examined Biblical knowledge. The "classic" tests of Biblical knowledge are the Northwestern University Religious Education Tests (Thompson, 1929; Geil, 1930). These consisted of three tests of knowledge (50 items each) and three tests of comprehension (King James Version, 20 items each). For both knowledge and comprehension, the tests covered (1) the life and teachings of Jesus, (2) the Old Testament, and (3) Acts and the epistles. All of the items called for multiple choice response. As late as 1956, the Director of Christian Education Research for the National Council of Churches could suggest no alternative to the Northwestern tests (McDowell, 1958, p. 12), and items from the knowledge tests may be found in use today.

Another influential set of Biblical knowledge tests was published by the Bureau of Educational Measurements, Kansas State Teachers College

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* For information, write: National Forum of Religious Educators, NCEA, One Dupont Circle, Suite 350, Washington, D.C. 20036.

(Peters, 1948). The first test covered the Old Testament, and the second test covered the New Testament. Each consisted of 150 items, approximately half of which were multiple choice, the rest being true-false and matching. This is the only such test given a full review in Buros (1959, pp. 660-1). The review is unfavorable. The Peters tests are out of print and unavailable from the publisher, but copies may be found in Stearns (1955).

We will also mention the Southern Baptist Theological Seminary Bible Tests (Bishop, 1958), one on information about the life and teachings of Christ, and the other on the ability to interpret passages from the Gospels. Both tests consist of multiple choice items, 50 items in the information test and 25 items in the interpretation test.

The Danforth Foundation sponsored "A Test of Religious Knowledge" (Cooke and Conover, 1965), a sophisticated, 75-item, multiple choice test covering Biblical and theological knowledge, with a relatively minor emphasis on Catholic doctrine. It is not clear to this author who the test was designed for. The typical church member (Catholic or Protestant) would be able to answer very few of the items.

Then we mention that the American Association of Bible Colleges has published a "Standardized Bible Content Test." This test is available to colleges and seminaries only, and the author has not been able to examine a copy.*

Other tests have been developed from time-to-time, mostly to serve the needs of dissertations and other research projects, but those listed are typical of what has been done in testing for knowledge.

The problem of validity is severe. In each case, the authors of the tests listed made an honest effort to construct good test items, but one may still ask if the score on the test adequately reflects acquaintance with the Bible.

The problem may be illustrated by reference to a long series of research studies which have investigated the relation between Biblical

* For information contact The American Association of Bible Colleges, Box 543, Wheaton, Illinois 60187.

knowledge and character development. If we have adequate measures of both Biblical knowledge and character development, we would hope to discover a positive correlation between the two. However, such a correlation has not been found.

As one examines these studies, one finds almost no items on the Biblical knowledge tests related to the teachings of the Old Testament prophets, and few items which test knowledge of the moral teachings of Jesus and Paul. In other words, the tests were not valid for the purpose for which they were being used. (Harlow, 1948, attempted to remedy this problem, but his work ought to be replicated and extended.)

THEOLOGICAL BELIEF AND RELIGIOUS PRACTICE

Theological Belief

The measurement of religious knowledge is relatively easy. The major problem is deciding what differences you would expect to find between a person with "much" religious knowledge and a person with "little" religious knowledge.

Measurement of theological belief is inherently more difficult, but the effort is worth-while. For example, the preacher who has a profile of theological belief in a congregation should be able to construct more effective sermons than one who simply aims his messages at the "modern mind."

One approach to the problem of measuring belief (although not strictly "theological" belief) is the "Ways to Live" survey developed by Charles Morris (Robinson and Shaver, 1969, pp. 552-559). The survey consists of thirteen paragraphs, each of which describes an attitude toward life. People are instructed to read each paragraph and both rank-order them and rate each on a seven point scale of importance. The result should provide a profile of the individual's approach to life.

Morris has briefly characterized the thirteen ways as (1) "nothing in excess," (2) "independent of persons and things," (3) "sympathetic concern for others," (4) "festivity and solitude in alternation," (5) "group activity, group enjoyment," (6) "man the eternal maker and re-maker," (7) "dynamic integration of diversity," (8) "carefree

wholesome enjoyment," (9) "wait in quiet receptivity," (10) "vigilant manly self-control," (11) "meditation on the inner self," (12) "active, daring, adventuresome deeds," and (13) "let yourself be used." (Morris, 1948, p. 82).

The most obvious difficulty with "Ways to Live" is that the paragraphs are complex and abstract, so that one must be a highly skilled reader to complete the survey. A variety of other problems are reviewed in Robinson and Shaver (1969, pp. 553-554). In spite of the difficulties, Robinson and Shaver conclude, "The test is a careful and creative effort, and his [Morris's] main conclusions are adequately supported." (p. 554.) The survey has been used in at least two research studies (Troyer and Yasuyuki, 1963; Randolph, 1972).

Among more strictly "theological" instruments are those developed by Howells and Sinclair (published individually in 1928), McLean (1952), and Lee (1965). A basic issue in measuring theological belief is how one may economically categorize belief without doing injustice to theological nuances. To many people it seems self evident that a basic categorization would involve some sort of "liberal-conservative" continuum. Howells, Sinclair, and McLean follow this assumption.

Howells and Sinclair developed a "conservative-radical" measure consisting of eleven pairs of statements representing opposing beliefs. The respondent is asked to check a seven-point scale indicating how strongly he tends to agree with one of the statements in the pair. (See Appendix B for the full test.) The eleven "theological" items are imbedded in a 118 item instrument which also includes seventeen other measures such as "optimism-pessimism" (6 items), "conscientiousness" (5 items), "kindliness" (5 items), "religious training" (8 items), "religious activity" (5 items) and "mystical experience" (7 items). There was no reported attempt to validate any of the measures (the same may be said of most religious belief scales developed since that time), but the form of the instrument is worthy of further consideration. (If used in a large study, the items should be subjected to factor analysis.)

The "Religious World Views" inventory (McLean, 1952) features a theological belief score which ranges from "0" to "100." Numerical scores represent a continuum which runs from "naturalistic humanism" (0-35) thru "religious liberalism" (35-65) to "Christian orthodoxy" (65-100). (See Appendix D for the test.) McLean awarded points only for "agree" or "disagree" responses to his 25 statements, using "undecided" answers in a separate computation of "certainty." McLean makes a fairly strong claim to have developed an interval scale of theological belief, but it should probably be seen as an ordinal scale, or even a nominal scale. It is nominal in the sense that a person with a low score will tend to be non-theistic, while a person with a high score will tend to be a conservative Christian theist.

If a pastor, teacher, or researcher wants a quick, general overview of theological belief in a group, this instrument would be worthy of consideration. "Religious World Views" has been used in research studies by Scarborough and Wright (1956) and Wright (1959).

While Howell, Sinclair, and McLean assumed that theological belief should be measured on a liberal-conservative continuum, Lee (1965) argued that it is possible to identify independent dimensions of theological belief. He used sophisticated test construction techniques and developed a "Religious Belief Inventory" that provides separate scores on "liberalism," "humanism," "scientism," "fundamentalism," "puritanism," "pietism," and "orthodoxy." (He later said that the "liberalism" and "orthodoxy" scales are too weak to be useful.) Gilmore (1967) argued that the dimensional structure actually collapses into a liberal-conservative continuum, while Davies (1975) argued for the validity of the Religious Belief Inventory. The issue is open. In any case, Lee's Religious Belief Inventory is probably the most carefully constructed theological belief instrument available. (It is reproduced in Appendix E.)

Religiosity

Researchers with a sociological orientation have tended to concern themselves more with the concept of "religiosity" than with what people believe. "Religiosity" has to do with a person's observable religious

activity, e.g., how often a person prays or attends public worship services. Robinson and Shaver (1969, pp. 629-721) reprinted a number of religiosity scales. The most ambitious scale they reprinted is by King and Hunt (pp. 656-662, cf. King and Hunt, 1969).

King and Hunt identified eleven dimensions of religiosity, and wrote several statements related to each dimension. For items in most dimensions, the respondent is to "strongly agree," "agree," "disagree," or "strongly disagree" (modified "Likert" responses). Following are the eleven dimensions along with a sample item for each:

1. Assent to credal propositions. (7 items.)
   "I believe that God revealed himself to man in Jesus Christ."
2. Religious knowledge. (6 items.)
   "Which of the following were Old Testament prophets?"
   (Deuteronomy; Elijah; Isaiah; Jeremiah; Leviticus; Paul)
3. Personal religious experience. (7 items.)
   "I frequently feel very close to God in prayer, during public worship, or at important moments in my daily life."
4. Church attendance. (4 items.)
   "During the last year, how many Sundays per month on the average have you gone to a worship service?"
   (none; one; two; three or more)
5. Organizational activities. (6 items.)
   "Church activities (meetings, committee work, etc.) are a major source of satisfaction in my life."
6. Church work with friends. (6 items.)
   "Think of your five closest friends. How many of them are members of your local congregation?"
   (none; one; two; three or more)
7. Talking and reading about religion. (6 items.)
   "How often do you talk about religion with your friends, neighbors, or fellow workers?"
   (regularly; occasionally; seldom; never)
8. Financial support. (5 items.)
   "Last year, approximately what percent of your total family income was contributed to the Church?"
   (1% or less; 2% to 4%; 5% to 9%; 10% or more)
9. Orientation to religious growth and striving. (5 items.)
   "The truly religious person steadily strives to grow in knowledge and understanding of what it means to live as a child of God."

10. Orientation to religious security or dogmatism. (3 items.)
"The truly religious person has the joy and peace which comes from recognizing that he is a forgiven sinner."

11. Extrinsic orientation. (6 items.)
"Church membership has helped me to meet the right kind of people."

Although it may seem that certain of these eleven "dimensions" overlap, statistical evidence presented by King and Hunt indicates that people respond to them as if they were independent, and that they are in fact dimensions in the mathematical sense.

An instrument which measures "religiosity" can provide useful information so long as one clearly understands that its primary purpose is to measure religious activity, and that this may be quite distinct from theological belief. It seems reasonable to expect that a person's "religiosity" score would predict one type of behavior, while that same person's theological belief score would predict another type of behavior. To this author's knowledge, the question of what behavior is predicted by which of these scores has never been investigated.

Unfortunately, researchers who measure "religiosity" tend to summarize their findings by saying that people who are most "religious" share certain characteristics. But in general conversation, the word "religious" covers theological belief and other attributes in addition to religious activity. Thus the research summaries can be highly misleading. (The present author feels that Glock and Stark's (1966) research has been mis-represented in some quarters because of this problem.)

Another problem is that one sometimes encounters religiosity scales which have been developed on an ad hoc basis by researchers who display little understanding of theology or the church. Of course, such scales are probably invalid, and the research based on them fruitless.

Religious Experience

A third aspect of religious consciousness and behavior which has been investigated quantitatively is "religious experience" (or mystical experience, or experience of the "Holy"), although little has been done in this area.

Stark (1965) has suggested that religious experience can be classified according to eight categories. Burger and Allen (1973) pursued the empirical question of whether or not people tend to group antecdotes according to Stark's suggested categories, and came up with encouraging results.* Thus, the field is open for test development. It is certainly possible that a background of mystical experience could effect the way a student responds to instruction, so both educator and researcher would find a simple, valid test useful.

The present author is aware of only one major attempt to construct such a test, that of Hood (1975). His test employs a Likert response (see below), and is composed of several scales. It is certainly worthy of further serious study.

CHARACTER AND MORALITY

During the first three decades of this century, character education was a concern of many authors, and there was a tendency for these authors to use the terms "religious education" and "character education" interchangeably. Whatever the relation between faith and morality, it is clear that attempts to measure "character" or "morality" are of at least passing interest to us. Note that we are concerned with "normal" character and morality, as opposed to character disorders and "deviant" behavior studied in clinical psychology.

Without a doubt the greatest work of this sort was done by Hugh Hartshorne, Mark A. May and colleagues in the Columbia University Teachers College "Character Education Inquiry." (Hartshorne and May, 1928; Hartshorne, May and Maller, 1929; Hartshorne, May and Shuttleworth, 1930.) The first volume of the report, Studies in Deceit, described a number of ingenious ways to identify people who cheat, steal or lie. The tests devised in this study have been widely used in research.

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* The reader interested in pursuing this matter will also be interested in a non-quantitative empirical study in which 114 persons who claimed to have had religious experiences were interviewed: Cofield, Dama C. "A Study of Numinous Experience." Unpublished M.S. thesis, Butler University, Indianapolis, Indiana, 1965. (See also, Sinclair, 1928.)

Hartshorne and May attempted to go beyond nominal identification of "cheaters" or other "bad characters" to an ordinal classification of students according to how much pressure was required before they would cheat, steal or lie.

The third volume, Studies in the Organization of Character, reported correlation of "moral knowledge" with "social opinion" and "social attitude." "Social opinion" and "social attitude" were measured with fairly conventional questionnaires. The concept of "moral knowledge" was subjected to careful analysis and a list of "mental contents and skills involved in ethical behavior" was developed. This list included social-ethical vocabulary and a variety of concepts considered necessary background for making "social adjustments." On the basis of this list, the researchers developed ten tests such as:

a "provocations test"
("Charles did not want to play marbles for keeps, but the boys called him a 'sissy'; so he went ahead and played for keeps anyway." Was his action "right," "excusable," or "wrong?")

a "recognitions test"
(i.e., recognizing and categorizing bad deeds. For example, is "using street car transfers that are out of date" best described as "cheating," "lying," "stealing," wrong but none of these three, or all right?)

and a social-ethical vocabulary test
(is "sluggard" closest in meaning to "snail," "lazy person," "lax," "shot," or "regard?").

While the tests developed for Studies in Deceit were designed to pinpoint dishonest behavior, the tests in Studies in the Organization of Behavior were explicitly intended to determine whether or not the person has the intellectual tools which are prerequisite for making ethical decisions. The authors recognized that knowledge will not guarantee ethical behavior, but they presumed that systematic ethical behavior requires a base of knowledge.

Because of changes in society during the past half century (e.g., we no longer have street cars), these ten tests could not be used intact today. Furthermore, one may question how adequately (validly)

the tests covered the areas of knowledge ("mental contents and skills") they were designed to cover. But the premise that some basic knowledge is necessary for ethical behavior makes sense, and it would certainly be possible to revise the tests.

Oscar K. Buros, in a recent address reviewing 50 years of testing noted that little has been done to follow the work of Hartshorne and May:

> The most important area which receives little attention today compared to what it received forty to fifty years ago is character assessment. . . . For many years, we commonly spoke of character and personality tests. It probably is a reflection of the times, but today there are practically no published rating scales or tests available to assess character and closely related traits. (Buros, 1977.)

In this paper we will mention one other development* in the study of character and morality, the work of Kohlberg and his associates on moral development (Kohlberg, 1977). Kohlberg has proposed a 5 or 6 stage ordinal scale of moral development which is measured by a detailed analysis of responses to an interview. The procedure is too complicated for routine diagnostic use, although we may, in time, see a test instrument developed which will measure moral development as adequately as the interview procedure. Rest (1975) has worked on an objective test instrument to measure moral judgement as defined by Kohlberg. He calls it the "Defining Issues Test," and sees it as having diagnostic potential when it reaches its final form.

A BASIC INTRODUCTION TO TWO USEFUL TECHNIQUES

Likert Scaling

"Likert scaling" is the name given to the test format which asks the respondent to make one of five responses to each of a series of statements: "strongly agree," "agree," "undecided," "disagree" or "strongly disagree." (Lee's "Religious Belief Inventory," Appendix E, employs Likert scaling.) The primary requirement for such a test item

* The author of the present paper has not reviewed the work of the Union College Character Research Project. cf. Ligon, 1956.

is that the statement be neither vague nor ambiguous. This means that "first draft" items must be tested with people similar to those for whom the test is intended.

Likert items are scored by assigning arbitrary values to the responses such as

SA = 5, A = 4, U = 3, D = 2, SD = 1,
or SA = 0, A = 1, U = 2, D = 3, SD = 4.

Reliability will increase if several items test the same general concept (see "fundamentalism," "pietism," etc. in Lee's RBI). In such a case, all of the scores testing that concept will be added. Of course, the resulting score means nothing by itself, but is useful for "sorting out" a group of respondents. If the test has been used widely enough to establish "norms," one can use it to get meaningful information about a few respondents.

Likert scaling is associated with "attitude" testing, but the present author suggests that it might sometimes be useful to include some cognitive ("true-false") items in such an attitude test. This might have two advantages. First, it might disguise the nature of the cognitive items, reducing "test anxiety." Second, a relatively long test using one format might be more acceptable than a shorter test which shifts from format to format, thus emphasizing the number of things being tested for. Of course one must decide in advance what constitutes a "wrong" answer when a Likert response is obtained to a true-false item.

Likert scaling is a versatile test format, and has been used widely, so one can compile a test by using sub-tests developed by various authors. (Robinson and Shaver, 1969, present many such tests.) For example, one who wishes to profile a congregation might select sub-tests from Lee (1965), King and Hunt (1969), and Hood (1975), and add true-false items to test knowledge of the Bible, church history, and theology. Once the sub-tests are selected, the items should be "scrambled" in random order, and two "dummy" items should be added to the head of the list as "warm-up" exercises. Be careful not to make the test too long.

Measurement of Feelings: The Semantic Differential

Feelings are not "theological," but theology is concerned with religious commitment, which involves feelings at some point. For the sake of demonstrating that feelings are subject to quantification, we will give brief attention to the semantic differential technique.

The semantic differential technique was first described in detail in a modern "classic" called The Measurement of Meaning (Osgood, et. al., 1957), a book that is essential reading for anyone interested in using the technique. Since publication of The Measurement of Meaning, the technique has been used widely. Snider and Osgood (1969) provide a 39 page bibliography of research studies which have employed the technique.

Briefly, the technique involves rating a concept or stimulus on a series of bi-polar adjective scales. Certain groups of scales have been found to cluster together quite frequently, so that a dozen-or-so scales will provide two or three distinct measurements of a person's feeling toward the concept or stimulus.

For example, the concept might be "Jesus Christ," and the scales on which this concept is rated might include "strong-weak," "nice-awful," and "active-passive." The rating sheet would be laid out as follows:

Jesus Christ

strong ___:___:___:___:___:___:___ weak
awful ___:___:___:___:___:___:___ nice
active ___:___:___:___:___:___:___ passive

The respondent would be instructed to complete the form by making one check on a line between each pair of adjectives. A check closest to the positive adjective in a pair would be scored "7," a check closest to the negative adjective would be scored "1," a check in the middle space would be scored "4," and so on. An average score would then be calculated for each factor.

It has frequently been found that the scales cluster into three factors called "evaluation" (e.g., nice-awful), "potency" (e.g., strong-weak), and "activity" (e.g., active-passive). In some cases, it is adequate to assume this three-dimensional structure of feeling, but if

one collects a sufficient number of responses and has access to a computer, it is advisable to do a factor analysis of the data. Other factors and different factor structures may appear depending on the concepts being evaluated (called "concept-scale interaction" in the literature) and the people serving as respondents (demonstrated by Wiggins and Fishbein, 1969). For example, Weima (1966) studied the response of a sample of Catholics to a selection of concepts including such things as "rosary," "sanctuary," "holy water," and "awe," along with secular concepts such as "manufacturer," "computer," and "penicillin." Analysis of responses showed a definite "religious" factor composed of adjective pairs such as "divine-human," "consecrated-unconsecrated," and "eternal-temporal."

The semantic differential technique is a powerful tool for comparing typical feeling-responses to various concepts and stimuli. Osgood, et. al. (1957) used the techniques of analytic geometry to compute the "distance" in terms of feeling-response between pairs of concepts. (Osgood viewed concepts and stimuli as being located in what he called "semantic space," which is a mathematical construct.)

One can also compare groups of people in terms of their response to various concepts. For example, do members of large churches differ from members of small churches in their response to the concept "church?"

The rationale behind the semantic differential is subtle, but as one thinks seriously about it, one sees many ways it can be used in the study of religious response. For example, W. T. Visser't Hooft has claimed that Rembrandt's later "secular" work is more spiritual than his earlier "religious" work. This assumption could be studied by having artists, theologians, and "ordinary people" respond on a semantic differential form to a selection of Rembrandt's paintings.

Two notes of caution need to be sounded. The first is that "semantic differential" is a technique, not an instrument. One cannot be sure in advance that a particular adjective pair will necessarily cluster with its usual factor. For serious research, plan to employ factor analysis.

The second note is that the technique is more sophisticated than it looks at first glance. It is quite easy to mimeograph some scales and have a congregation, class, or other group make check marks on them, but interpretation of the results is a subtle matter which requires that one have given some thought to the nature of "feeling" and the philosophical assumptions behind the semantic differential.

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APPENDIX A: CONCEPT EVALUATION TEST
from
J. A. Privette, A Study of Factors in the Understanding . . .
Ed.D. Dissertation, Southern Baptist Theological Seminary, 1972.

Instructions: Below there are twelve questions, each followed by six possible answers. Please read and follow these directions for each of the questions:

1. Read the question.
2. Read ALL of the statements which follow the question.
3. Go back and place a CHECK MARK (✓) by the ONE statement which you feel is the BEST answer to the question.
4. Be sure to check ONLY ONE STATEMENT for each question.

1. WHO IS GOD?
   - 5 God is the maker of heaven and earth.
   - 4 God is the father of Jesus Christ.
   - 0 God is someone who accepts you to come to live with him.
   - 3 God is our Saviour and Lord.
   - 1 God is a man who lives in heaven, loves everybody, and made everything.
   - 2 God is a spirit that cannot be seen.

2. WHO IS JESUS?
   - 3 Jesus is God's Son.
   - 4 Jesus is God's only Son who died on the cross.
   - 0 Jesus is a great man, a very important man who people believe in.
   - 5 Jesus is our personal Saviour who died on the cross for our sins.
   - 2 Jesus is a kind loving friend and a perfect human man.
   - 1 Jesus is the one who could make the blind to see.

3. WHAT IS SIN?
   - 2 Sin is when you do something that is not right.
   - 3 Sin is when you are tempted by the devil to do wrong.
   - 1 Sin is when you do not obey your parents.
   - 0 Sin is being afraid of something.
   - 4 Sin is something you do against God's will.
   - 5 Sin is rebelling against God.

4. WHAT IS GOD'S GRACE?
   - 1 God shed his grace on thee.
   - 0 God's grace is to say a prayer to God before you eat.
   - 2 God's grace is the kind things God does for us.
   - 4 God's grace is God's unfailing forgiveness and mercy.
   - 3 God's grace is God's love and understanding for us.
   - 5 God's grace is the free gift of God which is given to us because of God's love.

Appendix A: Privette's
"Concept Evaluation Test."

5. WHAT DOES IT MEAN TO BE SAVED?
   5 To be saved means to be born again.
   4 To be saved means to know Jesus and commit your life to him.
   2 To be saved means not to be lost.
   1 To be saved means you have been saved from hell.
   0 To be saved means to be baptized.
   3 To be saved means to trust God and let Jesus come into your life.

6. WHAT DOES IT MEAN TO BE LOST?
   1 To be lost means that you don't feel right.
   0 To be lost means that you feel that God is not with you.
   3 To be lost means that you are not going to heaven when you die.
   5 To be lost means not to trust or believe in Jesus as your Saviour.
   2 To be lost means not to be saved.
   NOTE: No response scored "4" was printed for this question.

7. WHAT DOES IT MEAN TO TRUST OR BELIEVE IN JESUS?
   2 This means that you must do what he wants you to do.
   4 This means to take him in your heart and believe.
   1 This means to love God, Jesus, and everybody, and hate the devil.
   3 To trust or believe in Jesus means to have faith in God.
   0 To trust or believe in Jesus means not to ever sin or do bad things.
   5 To trust or believe in Jesus means to know Jesus is the Son of God and believe that he died on the cross for our sins.

8. WHAT IS FORGIVENESS?
   3 Forgiveness means to forget and to love.
   4 Forgiveness means that you ask God to forgive you.
   2 Forgiveness means when someone does something to you, you forgive them and say, "That's all right."
   0 Forgiveness means to take back what you said.
   5 Forgiveness means that when you ask Jesus to forgive you of your sins, he will cleanse you.
   1 Forgiveness means if you steal something from somebody and you give it back, they forgive you for it.

9. WHY DO PEPLE CALL JESUS THE SAVIOUR OF THE WORLD?
   4 Jesus is called the Saviour because he saves you.
   0 Jesus is called the Saviour because he heals people.
   1 Jesus is called the Saviour because he performs miracles.
   5 Jesus is called the Saviour because he gave his life for us.
   2 Jesus is called the Saviour because he loves you.
   3 Jesus is called the Saviour because he came to earth to save the world from sin.

Appendix A: Privette's "Concept Evaluation Test"

10. WHAT DOES IT MEAN TO ACCEPT CHRIST?

___3___ To accept Christ means just ask the Lord to come into your heart.
___5___ To accept Christ means to take him as your personal Saviour.
___0___ To accept Christ means to get baptized.
___2___ To accept Christ means that Christ is a friend that you like.
___1___ To accept Christ means to believe that there is a God.
___4___ To accept Christ means to say that you want him to have your life.

11. HOW DOES A PERSON KNOW WHEN HE SINS?

___4___ Down in your heart God is telling you when you sin.
___1___ When a person sins he just knows something is wrong.
___3___ When we sin, it hurts our conscience.
___5___ A person knows when he sins because he gets hurt or he gets in trouble.
___0___ You know when you have sinned because you recognize that what you have done is wrong.
___2___ When a person sins, Christ convicts him.

12. WHAT DOES IT MEAN TO COMMIT YOUR LIFE TO CHRIST?

___5___ To commit your life to Christ means to give your all to Christ.
___2___ To commit your life to Christ means to have Christ call you to turn your life over to him.
___1___ To commit your life to Christ means to do kind things.
___4___ To commit your life to Christ means to let him take your life and let him do what God thinks is best for you.
___3___ To commit your life to Christ means to say you believe and love Christ in your heart.
___0___ You commit your life to Christ when you have risen from the grave.

"Concept Evaluation Test" reproduced with permission of Jerry A. Privette from his dissertation, A Study of Factors in the Understanding of Salvation-Related Concepts in Preadolescent Children from Three Southern Baptist Churches. Louisville: Southern Baptist Theological Seminary, 1972, pp. 112-115.

Appendix B: Bipolar Self Rating Scales was removed from the original document because permission to reproduce it could not be obtained. (pp. 26-8)

Source: Dissertations by Thomas H. Howells and Robert Daniel Sinclair, written at the University of Iowa in 1928, and published in the University of Iowa Studies in Character.

NOTE: APPENDIX C IS NOT USED
IN THIS PAPER.

APPENDIX D: WHAT DO YOU BELIEVE?
from
Milton D. McLean, "Religious World Views," motive, February 1952.

According to McLean, if you score

A. 65 - 100, your beliefs are within "Christian Orthodoxy."
   1. 85 - 100, the Bible is literally God's word.
   2. 75 - 85, accept historic Christian creeds and sacraments.
   3. 65 - 75, interpret Bible historically, reject literalism.

B. 35 - 65, your beliefs are within "Religious Liberalism."
   1. 55 - 65, appreciate both liberal and conservative faith. (cf. H. E. Fosdick and D. E. Trueblood.)
   2. 45 - 55, consider themselves liberal Protestants.
   3. 35 - 45, belief centers on the universal God, rejects notion that Christianity is the final religion.

C. 0 - 35, your beliefs are within "Naturalistic Humanism," rejecting notion of a personal God.
   1. 25 - 35, try to synthesize liberal religion and natural world view.
   2. 15 - 25, "scientific humanism."
   3. 0 - 15, this present life should be the sole object of man's concern.

As a basic reference, McLean lists Edwin A. Burtt, Types of Religious Philosophy. New York: Harper & Brothers, 1939. Regarding the ("S-N") scores interpreted above, he says,

> persons with S-N scores within an approximate range of 10 points hold similar positions; that those having scores within a range of 20 to 30 points have something in common; and that those who differ more than 30 points hold distinctly different points of view--positions which are difficult to reconcile.

Regarding the "C" (certainty) scores, he says that a typical college student will have a "C" score between 72 and 80. He suggests that if the "C" score drops below 52, the "S-N" score will probably not be valid.

What Do You Believe?

If you *agree* with a statement, place a small "x" in Column A
If you *disagree* with a statement, place a small "x" in Column D
If for any reason you cannot agree or disagree with a statement, place a small "x" in Column UN (uncertain or no opinion expressed).

	A		D		UN
	1	2	3	4	5
1. The work of the church could be just as effectively done by the schools and social agencies			x		
2. I believe in God the Father Almighty, maker of heaven and earth		x		x	
3. I believe that men working and thinking together can build a just society without supernatural help	x		x		
4. The writings of Plato, Aristotle, Dante, and Shakespeare are as much inspired as are the writings of Moses and Paul	x		x		
5. All miracles in the Bible are true		x		x	
6. In general, I consider church (or synagogue) attendance a waste of time	x		x		
7. Belief that in the end God's purposes will be achieved tends to destroy man's sense of social responsibility	x		x		
8. God is the great companion who shares with us the travail and tragedy of the world		x		x	
9. Jesus was born of the Virgin in a manner different from human beings		x		x	
10. The revelation of God's word in the Holy Scriptures is man's ultimate authority		x		x	
11. The attempt to believe in a supernatural being is a sign of a person's failure to accept responsibility for his own life	x		x		
12. I believe in the guidance of the Holy Spirit		x		x	
13. The chief end of man is to glorify God and enjoy him forever		x		x	
14. I believe Hell is a form of existence in a future life		x		x	
15. The four gospels, Matthew, Mark, Luke and John, contain some legendary materials	x		x		
16. We live in a universe indifferent to human values	x		x		
17. We were made for fellowship with God and our hearts are restless until they rest in him		x		x	
18. Man is saved by the free gift of God's grace		x		x	
19. The biblical writers were endowed with a divine wisdom which enabled them to foretell specific events in the distant future		x		x	
20. The fall of man in the story of the Garden of Eden is a myth symbolizing the problem of good and evil in the world	x		x		
21. Man is ultimately responsible to God		x		x	
22. God is only a symbol of man's ideals	x		x		
23. Jesus walked on water and raised the dead		x		x	
24. The biblical story of creation is probably based on one of the early Babylonian myths	x		x		
25. If I believed that any part of the Bible were unreliable I would no longer have confidence in its moral and spiritual teachings					
Totals					
	1	2	3	4	5

S-N scores: Sum of totals in cols. 2 and 3 above ____

Plus 25 ..... + 25

Minus sum of totals in cols. 1 and 4 above ..... −

Times two ..... × 2

S-N score →

C scores: Sum of the totals in cols. 1, 2, 3, and 4 ____

Times four ..... × 4

C score →

from motive magazine,
February, 1952.
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Appendix E: Scales from the Religious Belief Inventory, was removed from the original document because permission to reproduce it could not be obtained. (pp. 31-3)

Source: R. R. Lee, Theological Belief as a Dimension of personality, Ph.D. Dissertation, Northwestern University, 1965.